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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,621	04/26/2001	Jerry Prismantas	060783/P001US/10120272	7677
29053	7590	10/29/2004	EXAMINER	
DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.			MOORE JR, MICHAEL J	
2200 ROSS AVENUE			ART UNIT	
SUITE 2800			PAPER NUMBER	
DALLAS, TX 75201-2784			2666	

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

UK

Office Action Summary	Application No.	Applicant(s)	
	09/843,621	PRISMANTAS ET AL.	
	Examiner	Art Unit	
	Michael J. Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The "interference" spoken of on line 5 of claim 1 is already referred to as repetitive RF interference on line 2 of claim 1. Therefore, the limitation of claim 2 does not further limit the subject matter of claim 1.
2. Claim 12 is objected to because of the following informalities: On line 4, the word "the" before the word "periodicity" is not needed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.
4. Claims 8, 9, 26, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claims 8 and 9 each recite the limitation "said time sequence shifting" in line 2. There is insufficient antecedent basis for this limitation in the claim.
6. Claims 26 and 27 each recites the limitation "said time slots" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is believed that claim 26 should depend on claim 25 rather than claim 2.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 4, 12, 13, 18, 20, 23, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Carlson (U.S. 6,374,082). The Carlson reference teaches all of the limitations of the listed claims with the reasoning that follows.

Regarding claims 1 and 2, “an RF data transfer system” is anticipated by the system shown in Figure 2. “Means for detecting repetitive RF interference which occurs during RF data transfer intervals” is anticipated by the microwave periodic noise detect circuit 22 (means) of Figure 2 that is spoken of in column 3, lines 37-47. Lastly, “means, operative in response to periodicity and duration data obtained by the detecting means, for scheduling the RF data transfer to avoid the interference” is anticipated by microprocessor 24 (means) of Figure 2 that controls the communication of data during quiescent periods in the noise as spoken of in column 3, lines 37-47.

Regarding claim 4, “wherein the scheduling means includes means for shifting a time sequence of the RF data transfer to avoid the interference” is anticipated by microprocessor 24 (means) of Figure 2 that controls the communication of data during quiescent periods in the noise as spoken of in column 3, lines 37-47.

Regarding claim 12, “calculating characteristics of RF interference within an RF band of interest to arrive at an interference profile of periodicity and discrete durations of the interference” is anticipated by the periodic noise characteristics (interference profile) shown in Figures 1 and 4 that are calculated by microwave periodic noise detect circuit 22 of Figure 2. Lastly, “adjusting time sequences of desired RF transmissions to accommodate the interference profile” is anticipated by the communication of data during quiescent periods in the noise that is controlled by microprocessor 24 of Figure 2 as spoken of in column 3, lines 37-47.

Regarding claim 13, “detecting interference using a narrow band filter; and sweeping the filter across the band of interest” is anticipated by the microwave periodic noise detection circuit (filter) shown in Figure 3.

Regarding claim 18, “wherein the RF interference is repetitive RF interference” is anticipated by the detected periodic noise shown in Figure 1.

Regarding claim 20, “determining time periods of repetitive RF interference within an RF band of interest, using at least one antenna in electrical communication with at least one RF filter, to arrive at an interference profile of periodicity and duration of the interference” is anticipated by the periodic noise characteristics (interference profile) shown in Figures 1 and 4 that are calculated by microwave periodic noise detect circuit 22 (RF filter) of Figure 2 that is in communication with antenna 20 of Figure 2.

Regarding claim 23, “wherein the certain RF bands are unlicensed bands” is anticipated by the 2.4 GHz – 2.5 GHz ISM Band spoken of in column 1, lines 32-36.

Regarding claim **28**, "wherein the at least one RF filter further comprises an RF detector" is anticipated by the microwave periodic noise detection circuit (detector) shown in Figure 3.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims **3, 19, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson (U.S. 6,374,082) in view of Ubowski et al. (U.S. 6,346,692).

Regarding claims **3, 19, and 24**, Carlson teaches the system of claim **1**, the method of claim **18**, and the method of claim **20**, respectively. Carlson also teaches periodic noise in the ISM band resulting from microwave ovens. Carlson does not explicitly teach periodic noise in the ISM band resulting from radar signals. However,

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Ubowski et al. teaches a microwave oven which adaptively avoids interference with a communications device. Ubowski et al. also teaches in column 1, lines 33-38 how microwave energy has uses in radar applications. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to modify the teachings of Carlson to avoid radar interference rather than interference from microwave ovens in order to provide an improved means of communication in environments with periodic noise sources other than microwave ovens as spoken of in column 2, lines 1-19 of Carlson.

12. Claims **5, 6, 21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson (U.S. 6,374,082) in view of Blair et al. (US 2002/0173271).

Regarding claims **5 and 21**, Carlson teaches the system of claim **4** as well as the method of claim **20**. Carlson fails to teach the changing of a modulation of the RF data transfer to accommodate the time sequence adjustment. However, Blair et al. teaches the changing of a modulation scheme on page 5, paragraph 46 as well as in Table 1 on page 3. At the time of the invention, it would have been obvious to someone of ordinary skill given these references to combine the teachings of Carlson with the modulation scheme adjustment of Blair et al. in order to provide a more preferable modulation scheme for outgoing data as spoken of on page 5, paragraph 46 of the Blair et al. reference.

Regarding claims **6 and 22**, Carlson teaches the system of claim **4** as well as the method of claim **20**. Carlson fails to teach the adjusting of a code rate of the RF data transfer to accommodate the time sequence adjustment. However, Blair et al. teaches

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the changing of a symbol rate on page 5, paragraph 46 as well as in Table 1 on page 3.

At the time of the invention, it would have been obvious to someone of ordinary skill given these references to combine the teachings of Carlson with the symbol rate adjustment of Blair et al. in order to provide a more preferable symbol rate for outgoing data as spoken of on page 5, paragraph 46 of the Blair et al. reference.

13. Claims **7, 14, 15, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson (U.S. 6,374,082) in view of Petranovich et al. (U.S. 5,946,624).

Regarding claims **7, 14, and 25**, Carlson teaches the system of claim **1**, the method of claim **12**, and the method of claim **20**, respectively. Carlson fails to teach skipping or eliminating time slots in a sequence of time slots. However, Petranovich et al. teaches a method of reducing interference in Figure 6 where cells A-G use frequencies $F_1 - F_7$ during time slot T_1 and then skip time slot T'_1 and use frequencies in time slot T_2 . At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the teachings of Carlson with the time slot skipping of Petranovich et al. in order to reduce co-channel interference as spoken of in column 5, lines 11-36 of the Petranovich et al. reference.

Regarding claim **15**, Carlson further teaches that the desired RF transmissions are scheduled during the quiescent periods (duration) in the noise as spoken of in column 3, lines 37-47.

14. Claims **10, 11, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson (U.S. 6,374,082) in view of Hiramatsu et al. (U.S. 6,463,261).

Regarding claim **10**, Carlson teaches the system of claim **1**. Carlson fails to teach using a separate antenna for interference detection. However, Hiramatsu et al. teaches a system in Figure 2 that uses an antenna 1 for reception and detection of an interference signal as spoken of in column 4, lines 9-17. This antenna 1 is different than antenna 8 of Figure 2, which is used for data transmission as stated in column 4, lines 37-43. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the teachings of Carlson with the multiple antenna teachings of Hiramatsu et al. in order to eliminate interference in the system as spoken of column 3, lines 51-63.

Regarding claims **11 and 29**, Carlson teaches the system of claim **1** as well as the method of claim **20**. Carlson fails to teach that the antennas used for data transfer are sectorized and are used to determine a direction of the interference. However, Hiramatsu et al. teaches a system in Figure 2 that detects interference from an undesired source (direction of interference) as well as desired information as shown in Figure 2. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the teachings of Carlson with the interference detection teachings of Hiramatsu et al. in order to eliminate interference in the system as spoken of column 3, lines 51-63.

15. Claims **8, 9, 16, 17, 26, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson (U.S. 6,374,082) in view of Petranovich et al. (U.S. 5,946,624) as applied to claims **7, 14, 15, and 25** above, and further in view of Blair et al. (US 2002/0173271).

Regarding claims **8, 16, and 26**, Carlson in view of Petranovich et al. teaches the system of claim **7**, the method of claim **15**, and the method of claim **25**, respectively. Carlson in view of Petranovich et al. fails to teach the changing of a modulation of the RF data transfer. However, Blair et al. teaches the changing of a modulation scheme on page 5, paragraph 46 as well as in Table 1 on page 3. At the time of the invention, it would have been obvious to someone of ordinary skill given these references to combine the teachings of Carlson in view of Petranovich et al. with the modulation scheme adjustment of Blair et al. in order to provide a more preferable modulation scheme for outgoing data as spoken of on page 5, paragraph 46 of the Blair et al. reference.

Regarding claims **9, 17, and 27**, Carlson in view of Petranovich et al. teaches the system of claim **7**, the method of claim **15**, and the method of claim **26**, respectively. Carlson in view of Petranovich et al. fails to teach the changing of code rate of the RF data transfer. However, Blair et al. teaches the changing of a symbol rate on page 5, paragraph 46 as well as in Table 1 on page 3. At the time of the invention, it would have been obvious to someone of ordinary skill given these references to combine the teachings of Carlson in view of Petranovich et al. with the symbol rate adjustment of Blair et al. in order to provide a more preferable symbol rate for outgoing data as spoken of on page 5, paragraph 46 of the Blair et al. reference.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Roberts et al. (U.S. 6,006,071), Callaway, Jr. (U.S. 6,711,380),

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and West (U.S. 5,574,979) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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FRANK DUONG
PRIMARY EXAMINER

Michael J. Moore, Jr.
Examiner
Art Unit 2666